

**REMARKS**

Claims 1-3 are all the claims pending in the application.

Claims 1-3 are rejected under 35 U.S.C. § 102(b) as anticipated by Magara (U.S. Patent No. 5,434,380); and claims 1-3 are rejected under 35 U.S.C. § 103(a) as obvious over a combination of Magara in view of Graell (U.S. Patent No. 5,187,341). Reconsideration and removal of these rejections are respectfully requested on the basis of the present amendment to the claims and the following remarks.

The Examiner has substantially repeated the same rejection which was previously made in this application. In spite of the Amendment filed on February 11, 2002 which included the limitation of a diameter of an electric discharge arc column being extended during a period of the first pulse width, the Examiner contends, on page 4 of the Office Action, that Magara discloses this feature because the increase of the diameter of the electric discharge current during the first part of a discharge is inherent and merely a law of nature. In order to support his position, the Examiner cited an article "The BASICS: Technological Aspect of Spark Erosion." In addition, the Examiner contends that Magara teaches that emission of the electrode material is suppressed during the first pulse width because during the first pulse width as contrasted with the second pulse width less emission of the electrode occurs.

In contrast, in the present invention the pulse width and the peak value are controlled in a stepwise manner so that the quantity of supply of hard coat material by emission of electrode material is also controlled. To this end, the increase of a diameter of the electric discharge arc

column is controlled. On the other hand, the diameter of the electric discharge current was without any control in the prior art.

Further, Magara does not teach or suggest the invention. While a step-up current impulse diagram shown in Fig. 16(b) of Magara appears to be similar to that of the present invention, the Magara diagram illustrates a value of current which is allowed to flow from an auxiliary power supply side in a power supply consisting of the auxiliary power supply 10b and a main power supply 10a. In view of this, the intent or purpose of Magara is quite different from that of the present invention where the Applicants have been motivated to solve the problems inherent in electric discharge surface treatment. That is, in order to reduce the consumption of an electrode and improve the performance of a coating, the current value is changed. Neither reference teaches or suggests such motivation as mentioned above. Nor is such teaching found when Magara is combined with Garaell.

A technique by which an electric discharge waveform is changed in the electric discharge treatment from the viewpoint of the electrode consumption is disclosed in, for example, U.S. Patent No. 3,974,357. However, there is conventionally no concept that the current waveform should be controlled for the purposes of reducing the electrode consumption and increasing the performance of the coating in electric discharge treatment. Therefore, the present invention is patentable over the cited references.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

AMENDMENT UNDER 37 C.F.R. § 1.116  
Appln. No.: 09/937,220

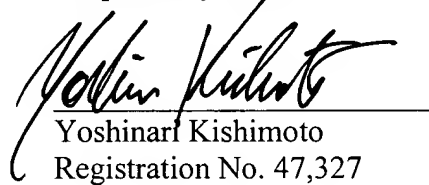
Attorney Docket No.: Q65416

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Attached hereto is a copy of version with markings to show changes made.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

  
Yoshinari Kishimoto  
Registration No. 47,327

SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

Date: **August 20, 2002**